What is claimed is:

1. A method for allowing a network element having network connections to a ring network to manage the network connections, the method comprising:

sending a connection state message from the network element around the ring network when the network element adds, deletes or modifies at least one timeslot within at least one of the network connections;

receiving the connection state message from the ring network, the connection state message having been updated by intermediate network elements that are part of the first ring network; and

managing the network connections connecting the network element to the ring network by using the received connection state message.

2. The method according to claim 1, said sending step sending the connection state message from the network element around the ring network when the network element adds, deletes or modifies at least one of the network connections.

3. The method according to claim 1, said managing including detecting the addition and/or deletion of timeslots at each of the network elements connected to the ring network.

4. The method according to claim 1, said managing including detecting the addition and/or deletion of network connections at each of the network elements connected to the ring network.

5. The method according to claim 1, said managing including storing current concatenation information during a ring switch operation of the ring network.

6. The method according to claim 1, said managing including squelching certain network connection(s) during a partial ring switch operation of the ring network.

7. The method according to claim 1, wherein the configuration message includes a message ID, a node ID, a span ID, a line ID, line timeslots information, timeslot concatenation state, and timeslot add/drop state information.

8. The method according to claim 1, wherein the network elements are capable of adding, dropping, passing through, and interchanging timeslots within the network connections.

9. A method of allowing the network element and the intermediate network elements to manage their respective network connections to the ring network according to claim 1, further comprising:

at the intermediate network elements, using the received connection state message to manage their respective network connections to the ring network.

10. The method according to claim 9,

wherein the network connections including working and protect network connections,

wherein the network connections are permitted to be of different bandwidths,

wherein the configuration message includes timeslot concatenation information,

the method further comprising:

detecting failure of a span carrying one or more network connections;

reconfiguring, based on the configuration message, network elements adjacent to the failed span to reroute network traffic over the protect network connections; and

reconfiguring, based on the configuration message, the non-adjacent network elements not adjacent to the failed span to pass through network traffic entering from the protect network connections.

11. A communications system for managing network connections, comprising:

a plurality of network elements connected in a ring network configuration via the network connections;

at an originating network element, sending a connection state message around the ring network when the originating network element adds, deletes or modifies at least one timeslot within at least one of the network connections;

at the intermediate network elements, updating the connection state message with topology information stored at each of the intermediate network elements;

at the intermediate network elements, using the received connection state message to manage their respective network connections to the ring network;

at the originating network element, receiving the connection state message from the ring network, the connection state message having been updated by intermediate network elements that are part of the first ring network; and

at the originating network element, managing the network connections connecting the originating network element to the ring network by using the received connection state message.

12. The system according to claim 11, wherein the managing of the network connections performed by the network elements includes detecting the addition and/or deletion of timeslots at each of the network elements connected to the ring network.

13. The system according to claim 11, wherein the managing of the network connections performed by the network elements includes detecting the addition and/or deletion of network connections at each of the network elements connected to the ring network.

14. The system according to claim 11, wherein the managing of the network connections performed by the network elements includes storing current concatenation information during a ring switch operation of the ring network.

15. The system according to claim 11, wherein the managing of the network connections performed by the network elements includes squelching certain network connection(s) during a partial ring switch operation of the ring network.

16.   The system according to claim 11, the configuration message includes a message ID, a node ID, a span ID, a line ID, line timeslots information, timeslot concatenation state, and timeslot add/drop state information.

17. The system according to claim 11, said network elements being capable of adding, dropping, passing through, and interchanging timeslots within the network connections.

18.   The system according to claim 11,

wherein the network connections including working and protect network connections,

wherein the network connections are permitted to be of different bandwidths,

wherein the configuration message includes timeslot concatenation information,

at least some of said network elements detecting failure of a span carrying one or more network connections;

said network elements that are adjacent to the failed span reconfiguring, based on the configuration message, to reroute network traffic over the protect network connections; and

said network element(s) that are not adjacent to the failed span reconfiguring, based on the configuration message, to pass through network traffic entering from the protect network connections.